

**ABSTRACT OF THE DISCLOSURE**

**FREQUENCY/SIGNAL CONVERTER AND  
SWITCHING REGULATOR HAVING SUCH A CONVERTER**

A frequency/signal converter is provided that receives an input clock signal and generates an output signal. The converter includes a first circuit that receives the input clock signal and generates first and second logic signals that are complementary with one another, a loop circuit that includes a first circuit line and a second circuit line that are each coupled between a first supply voltage and a second supply voltage, and an integrator device. A current proportional to the output signal of the converter flows in the loop circuit. The first and second circuit lines include first and second capacitive elements and first and second switches for interrupting current flow into the first and second capacitive elements, respectively. The first and second switches are controlled by the first and second logic signals, respectively. The first and second circuit lines are alternatively coupled to an input terminal of the integrator device in order to obtain a substantially constant voltage signal at the input terminal of the integrator device, and the integrator device provides the output signal of the converter. Also provided is a switching regulator for providing a regulated voltage to a load.

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